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CLAIMS

1. A method for producing an end-product comprising the steps of:
 - a) contacting a carbon substrate and at least one substrate-converting enzyme to produce an intermediate; and
 - b) contacting said intermediate with at least one intermediate-converting enzyme, wherein said intermediate is substantially all converted by said intermediate enzyme to said end-product.
2. The method of Claim 1, wherein said intermediate-converting enzyme is a microbial enzyme.
3. The method of Claim 2, wherein said intermediate-converting microbial enzyme is secreted by a microorganism in contact with said intermediate.
4. The method of Claim 1, wherein said substrate-converting enzyme is a microbial enzyme.
5. The method of Claim 4, wherein said substrate-converting microbial enzyme is secreted by a microorganism in contact with said substrate.
6. The method of Claim 1, wherein said intermediate-converting enzyme and said substrate-converting enzyme are produced by microorganisms of the same species.
7. The method of Claim 1, wherein said intermediate-converting enzyme and said substrate-converting enzyme are produced by microorganisms of the different species.
8. The method of Claim 1, wherein concentration level of said intermediate is maintained at a level below that which triggers catabolite repression effects upon the conversion of said intermediate to said end-product.
9. The method of Claim 1, wherein concentration level of said intermediate is maintained at a level below that which triggers enzymatic inhibition effects upon the conversion of said intermediate to said end-product.

10. The method of Claim 1, wherein said intermediate is converted to said end-product at a rate sufficient to maintain the concentration of said at less than 0.25%.

11. The method of Claim 1, wherein said substrate is selected from the group consisting of biomass and starch.

12. The method of Claim 1, wherein said intermediate is selected from the group consisting of hexoses and pentoses.

13. The method of Claim 12, wherein said hexose is glucose.

14. The method of Claim 1, wherein said end-product is selected from the group consisting of 1,3-propanediol, gluconic acid, glycerol, succinic acid, lactic acid, 2,5-diketo-D-gluconic acid, gluconate, glucose, alcohol, and ascorbic acid intermediates.

15. The method of Claim 1, wherein said contacting said substrate and substrate-converting enzyme further comprises bioconverting said substrate to produce said intermediate.

16. A method for producing an end-product comprising the steps of:

a) contacting a carbon substrate and at least one substrate-converting enzyme to produce an intermediate; and

b) contacting said intermediate with at least one intermediate-converting enzyme, wherein said intermediate is substantially all converted by said intermediate enzyme to said end-product, and wherein the presence of said end-product does not inhibit the further production of said end-product.

17. The method of Claim 16, wherein said intermediate-converting enzyme is a microbial enzyme.

18. The method of Claim 16, wherein said intermediate-converting microbial enzyme is secreted by a microorganism in contact with said intermediate.

19. The method of Claim 16, wherein said substrate-converting enzyme is a microbial enzyme.

20. The method of Claim 16, wherein said substrate-converting microbial enzyme is secreted by a microorganism in contact with said substrate.

21. The method of Claim 16, wherein said intermediate-converting enzyme and said substrate-converting enzyme are produced by microorganisms of the same species.

22. The method of Claim 16, wherein said intermediate-converting enzyme and said substrate-converting enzyme are produced by microorganisms of the different species.

23. A method for producing an end-product comprising the steps of:

- a) contacting a carbon substrate and at least one substrate-converting enzyme to produce an intermediate; and
- b) contacting said intermediate with at least one intermediate-converting enzyme, wherein said intermediate is substantially all converted by said intermediate enzyme to said end-product, and wherein the presence of said substrate does not inhibit the further production of said end-product.

24. The method of Claim 23, wherein said intermediate-converting enzyme is a microbial enzyme.

25. The method of Claim 23, wherein said intermediate-converting microbial enzyme is secreted by a microorganism in contact with said intermediate.

26. The method of Claim 23, wherein said substrate-converting enzyme is a microbial enzyme.

27. The method of Claim 23, wherein said substrate-converting microbial enzyme is produced is secreted by a microorganism in contact with said substrate.

28. The method of Claim 23, wherein said intermediate-converting enzyme and said substrate-converting enzyme are produced by microorganisms of the same species.

29. The method of Claim 23, wherein said intermediate-converting enzyme and said substrate-converting enzyme are produced by microorganisms of the different species.